



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,991	09/15/2000	Jeffrey Scott Kuskin	73139/0269824	3505

4586 7590 09/15/2006

ROSENBERG, KLEIN & LEE
3458 ELLICOTT CENTER DRIVE-SUITE 101
ELLICOTT CITY, MD 21043

EXAMINER

COLIN, CARL G

ART UNIT	PAPER NUMBER
----------	--------------

2136

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/662,991

Applicant(s)

KUSKIN ET AL.

Examiner

Carl Colin

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/14/2006 and conversation on 9/8/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>20060911</u> . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Arguments

1. In response to communications filed on 5/31/2006, the following claims 1-18 are presented for examination.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. Applicant's arguments, filed on 5/31/2006, with respect to the rejection of claims 1-18 have been fully considered, and they are persuasive with respect to Clarke's reference in view of the declarations filed on 5/12/2006 and 5/31/2006 under 37 CFR 1.131. Applicant has not previously addressed the other reference cited in the last rejection. Upon further consideration, a new ground of rejection is made.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to

Art Unit: 2136

which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3.1 **Claims 1-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,026,167 to **Aziz** in view of US Patent 5,930,472 to **Smith**.

3.2 **As per claim 7, Aziz** substantially teaches a key-caching system for operation on a packet received from an external source, (see figure 3), the packet comprising a header that is not encrypted and a body that is encrypted, (see figure 6) the system comprising: a system memory; a networking unit including a cache including entries for source address, a processor, and corresponding keys, (see column 6, lines 26-57; column 5, lines 42-67; and figure 1) and discloses I/O circuit that meets the recitation of a controller; the controller effecting communication and data transfer between the system memory, the networking unit and the processor, wherein the key-caching program comprising code to effect; **Aziz** discloses wireless communication in prior art as part of communications links of the computer over the Internet (column 1, lines 31-40), and discloses a time out period for discarding the packet in case of transmission delay and further discloses multiple requests may be sent in case of packet losses of earlier request/response messages that meets the recitation of establishing acknowledgment-responsive wireless communication with the external source as interpreted by the Examiner (see column 3, lines 28-31; column 13, lines 23-44; and column 14, lines 41-46); extracting from the header a source address (column 9, lines 10-13); discloses whether there is a key associated with the source node in the cache (see column 10, lines 13-27 and column 10, lines 50-67); extracting

Art Unit: 2136

a key in the cache corresponding to node I and decrypts the body of the packet (see column 10, lines 50-67); and discloses when the key is not in the cache, extracting a key from the system memory and stores the values in the cache for future use to prepare the cache for decrypting the packet for later use (see column 11, lines 10-21). By referring to the IP source as Node I, it is apparent to one of ordinary skill in the art that the cache contains IP security protocol information and a security association exists between the source address and the key related to the source or Node I in the cache in order to generate the key based on the source address and retrieve the key for encryption purpose as taught in Aziz (column 9, lines 10-13; column 10, lines 13-27). Not explicitly disclosing, determining whether the source address is in the cache, is either inherent in Aziz or obvious to one of ordinary skill in the art. Examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art to determine keys in the cache based on the source address because by creating a security association in the cache between keys and source address, it would help to trust and identify whether the transmission of the packets originate from the right nodes. Although **Aziz** discloses a time-out period to determine whether a packet is valid after a period of time, **Aziz** is silent about authorizing an acknowledgement signal for the external source. **Smith** in an analogous art teaches a cache synchronization method for reducing latency in a wireless communication that comprise responses that include acknowledgements (see column 3, lines 9-13) and further teaches if information is in the cache to avoid eliminating the need of retransmitting the information over the wireless link, the nodes can periodically communicate cache control information (see column 6, lines 18-50). Therefore, it would have been obvious at the time the invention was made to modify the system of **Aziz** that suggests multiple requests may be sent in case of packet losses to

Art Unit: 2136

authorize an acknowledgement signal for the external source when the key information is in the cache to minimize the amount of inbound traffic and latency as taught by **Aziz** (column 6, lines 18-50). The motivation to do so is given by **Smith** who suggests that the nodes can periodically communicate cache control information to maintain cache synchronization so that to avoid eliminating the need of retransmitting information already in the cache thereby reducing latency (see column 5, lines 39-48 and column 6, lines 18-50).

As per claims 1 and 13, **Aziz** substantially teaches a method and application program for key caching comprising: receiving a packet from an external source, (see figure 3), the packet comprising a header that is not encrypted and a body that is encrypted, (see figure 6). **Aziz** discloses wireless communication in prior art as part of communications links of the computer over the Internet (column 1, lines 31-40), and discloses a time out period for discarding the packet in case of transmission delay and further discloses multiple requests may be sent in case of packet losses of earlier request/response messages that meets the recitation of establishing acknowledgment-responsive wireless communication with the external source as interpreted by the Examiner (see column 3, lines 28-31; column 13, lines 23-44; and column 14, lines 41-46); extracting from the header a source address (column 9, lines 10-13); discloses whether there is a key associated with the source node in the cache (see column 10, lines 13-27 and column 10, lines 50-67); extracting a key in the cache corresponding to node I and decrypts the body of the packet (see column 10, lines 50-67); and discloses when the key is not in the cache, extracting a key from the system memory and stores the values in the cache for future use to prepare the cache for decrypting the packet for later use (see column 11, lines 10-21). By referring to the IP

Art Unit: 2136

source as Node I, it is apparent to one of ordinary skill in the art that the cache contains IP security protocol information and a security association exists between the source address and the key related to the source or Node I in the cache in order to generate the key based on the source address and retrieve the key for encryption purpose as taught in *Aziz* (column 9, lines 10-13; column 10, lines 13-27). Not explicitly disclosing, determining whether the source address is in the cache, is either inherent in *Aziz* or obvious to one of ordinary skill in the art. Examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art to determine keys in the cache based on the source address because by creating a security association in the cache between keys and source address, it would help to trust and identify whether the transmission of the packets originate from the right nodes. Although *Aziz* discloses a time-out period to determine whether a packet is valid after a period of time, and request/response in transmitting packets, *Aziz* is silent about establishing an acknowledgement signal for the external source, which may be broadly but reasonably interpreted as disclosed by *Aziz* above. *Smith* in an analogous art teaches a cache synchronization method for reducing latency in a wireless communication that comprise responses that include acknowledgements (see column 3, lines 9-13) and further teaches if information is in the cache to avoid eliminating the need of retransmitting the information over the wireless link, the nodes can periodically communicate cache control information (see column 6, lines 18-50). Therefore, it would have been obvious at the time the invention was made to modify the system of *Aziz* that suggests multiple requests may be sent in case of packet losses to authorize an acknowledgement signal for the external source when the key information is in the cache to minimize the amount of inbound traffic and latency as taught by *Aziz* (column 6, lines 18-50). The motivation to do so is

Art Unit: 2136

given by **Smith** who suggests that the nodes can periodically communicate cache control information to maintain cache synchronization so that to avoid eliminating the need of retransmitting information already in the cache thereby reducing latency (see column 5, lines 39-48 and column 6, lines 18-50).

As per claims 3, 9, and 15, these claims similar limitations as claim 7 above regarding the step of sending acknowledgement signal, the combined references disclose reducing inbound traffic and minimizing latency by periodically communicate cache control information, maintaining cache and authorizing the packet to be resent when information is not in the cache (see Smith, column 6, lines 18-25 and lines 43-50) that meets the recitation of when the source address is not included in an entry of the cache, authorizing an acknowledgment signal for anticipatory transmission to the external source of the packet prior to retrieval of the key corresponding to the source address as indicated in claim 7 above, and when the source address is included in the system memory, using the key to decrypt the body of the packet prior to arrival of a subsequent packet from the external source (see Aziz, column 10, lines 50-67). Therefore, these claims are rejected on the same rationale as the rejection of claim 7.

As per claims 2, 8, and 14, Aziz discloses discarding packet when the value in the field is not valid and discarding invalid packet (see column 10, line 50 through column 11, line 8) that meets the recitation of dropping the packet; when the source address is not included in an entry of the cache, the packet is dropped which is also known in the art when packet policy rule does not match.

As per claims 4-6, 10-12, and 16-18, the combined references teach a cache memory for fast processing that meets the recitation of wherein the cache includes fast memory (see Aziz figures 3-5).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl Colin whose telephone number is 571-272-3862. The examiner can normally be reached on Monday through Thursday, 8:00-6:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser G. Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CC

Carl Colin
Patent Examiner
September 11, 2006

NASSER MOAZZAMI
PRIMARY EXAMINER


9, 11, 06